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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,504	12/26/2000	Junji Yoshida	6635-60104	6968

7590 01/28/2003

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San Francisco, CA 94109

EXAMINER

LEUNG, QUYEN PHAN

ART UNIT PAPER NUMBER

2828

DATE MAILED: 01/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/750,504

Applicant(s)

YOSHIDA ET AL.

Examiner

Quyen P. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 20-28, 30, 31, 33 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19, 29, 32, 34, 36-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of group II (claims 1-19, 29, 32, 34 and 36-43) in Paper No. 12 is acknowledged.

***Response to Arguments***

2. Applicant's arguments filed 7/25/02 have been fully considered but they are not persuasive.
  - a. "Claims 1, 12... have been amended to indicate that the optical confinement layer is undoped... Claims 1, 12... have been further amended to indicate that the spacer layer is in contact with the cladding layer, and in contact with the optical confinement layer. "
  - b. "Claim 29 has been amended to indicate that the layer formed directly over the spacer layer is formed from undoped material... Claim 29 has been amended to indicate that the second III-V semiconductor layer (e.g., optical confinement layer) is formed directly on the spacer layer."

Regarding a above, it is noted that since claims 1 and 12 did not specify what kind of contact, it is subject to a reasonable, broad interpretation. McIlroy et al teaches "electrical" contact and therefore meets the claimed invention, as amended. In the event applicant meant "direct" contact, Burnham teaches this as well.

Regarding b above, it is noted that claim 29 is still anticipated by Burnham, because Burnham teaches direct contact as claimed.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-19, 29, 32, 34, 36-43 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. A light generating layer, upper and lower confining means, a resonant cavity means, a pumping means critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Note for example claim 36, which claims a semiconductor laser but has no mention of a light generating layer, upper and lower confining means, a resonant cavity means, or a pumping means. Applicant's disclosure requires each of a light generating layer, upper and lower confining means, a resonant cavity means, and a pumping means.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Claim 34 recites the limitation "said optical confinement layer" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

**Claim Rejections - 35 USC § 102**

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

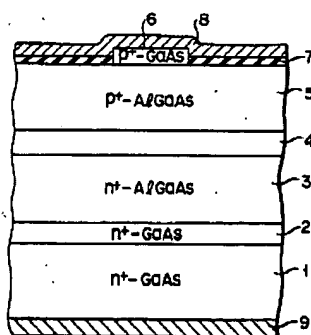
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

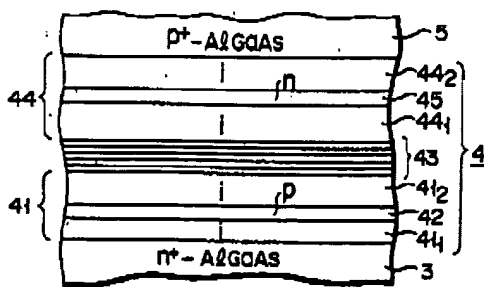
9. Claims 1-3, 5-15, 17-19, 29, 34, 36-38, 40-43 are rejected under 35

U.S.C. 102(b) as being anticipated by McIlroy et al (4,701,774). McIlroy et al discloses the claimed invention. Figures 1 and 2 illustrate a semiconductor laser device comprising a doped semiconductor cladding layer (3), a semiconductor optical layer (41<sub>2</sub>); and an undoped semiconductor spacer layer (41<sub>1</sub>) positioned between the cladding layer (3) and the optical confinement layer (41<sub>2</sub>). Note further the substrate (1), the semiconductor active layer (43) for generating light, a semiconductor upper optical confinement layer (44<sub>1</sub>); a p-doped semiconductor upper cladding layer (5); and electrodes (8,9) for current injection to the device. See col. 6 lines 60-63 for the suggestion of InP and InGaAsP.

F I G. 1



F I G. 2



10. Claims 1-4, 6, 11, 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Burnham et al (4,585,491). Burnham et al discloses the claimed invention.

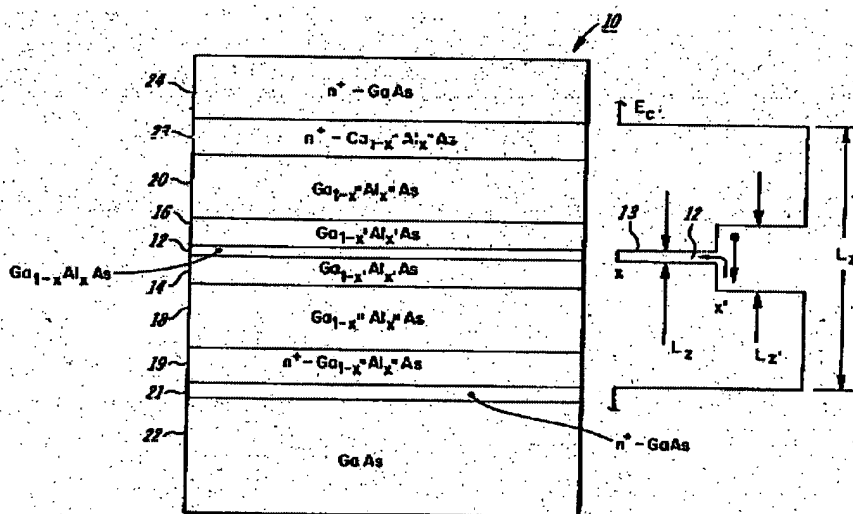


FIG. 1

Figure 1 illustrates a semiconductor laser device (10) comprising a doped semiconductor cladding layer (19), a semiconductor optical confinement layer (14); and an undoped semiconductor spacer layer (18) positioned between the cladding layer (19) and the optical confinement layer (14). Note further the substrate (22), the semiconductor active layer (12) for generating light.

### Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4, 16, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over McIlroy et al as applied to the claims above, and further in view of Burnham et al (4,585,491). McIlroy et al has been discussed except for the n-type dopant being Se. Burnham et al teaches Se is a well-known n-type dopant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the n-type dopant being Se, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quyen P. Leung whose telephone number is (703) 308-0545. The examiner can normally be reached on 8:30-5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
Quyen P. Leung  
Primary Examiner  
Art Unit 2828

QPL  
January 27, 2003